CF ECHO II

Ultrasonic Compact Heat and Cooling Meter, qp 0.6-15 m³/h

The CF ECHO II is the compact meter of Itron's CF Heat and Cooling meter family equipped with ultrasonic flow meter. Electronic data processing gives high precision throughout the entire measurement curve, producing a dynamic range exceeding class C.
Flows can be measured from qp 0.6 to qp 15 m³/h (DN15 to DN50) with reliable and stable accuracy.

Thanks to a complete portfolio of body variants of every size, the CF ECHO II meters are very flexible in use.

All hydraulic bodies carry a flanked design helping meter installation.

FEATURES AND BENEFITS

- High metrology
- Advanced functions
- Ease of installation
- Easy reading
- Pre-equipped for communication

CE type approval certificate:
DE-06-MI004-PTB002

Applications

Heating, Cooling and Combined, return and supply positioning, horizontal or vertical.

Benefits

- Accurate measurement of high and low flows,
- Easy reading,
- Pre-equipped for communication.

Standards Compliance

- MID 2004/22/EC Module B+D
- Class 2.0 acc. EN 1434
- Env. Class C acc. EN 1434
- OIML R75
- PTB Class C
- SP Test ≤ -2%
- PED compliant

Advanced Functions

The CF ECHO II provides a number of advanced functions such as data-logging for complex network analysis, double tariff for further billing choices, peak recording and lots more, which are powerful diagnostic aids for network management.

All available data are presented on the highly ergonomic and multifunctional display.

Communication Device

The plug and play communication boards open the way for data collection through various reading systems.

Loop 1

Billing Data
Energy
Cooling energy*
Volume
LCD test
External water meter 1 + 2*
*optional

Loop 2

Additional Information
Flow rate
Power
Supply temperature
Return temperature
Temperature difference
Operating time
Power peak date + time*
Flow peak date + time*
Temperature peak date + time*
Time in alarm
Temperature alarm
Flow alarm
Overflow alarm
Power supply alarm
Current time + date*
M-Bus primary address
M-Bus secondary address
M-Bus baud rate
Pulse value water meter 1 + 2*
*optional

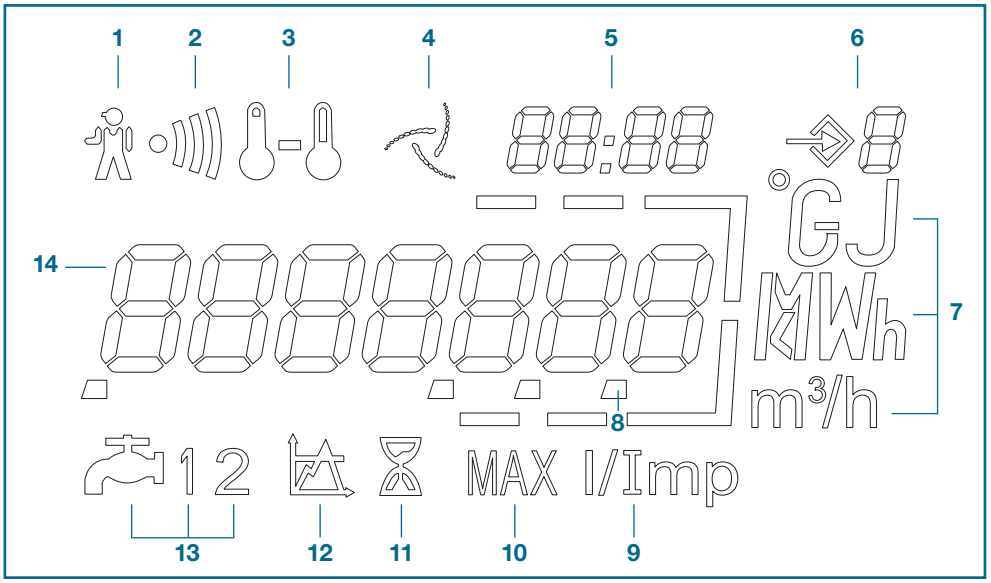
Loop 3

Fixed Date Reading
Fixed date energy 1...24
Fixed date cooling energy 1...24*
Fixed date volume 1...24
Fixed date water meter 1 + 2 1...24*
Software version
*optional

MULTIFUNCTIONAL DISPLAY

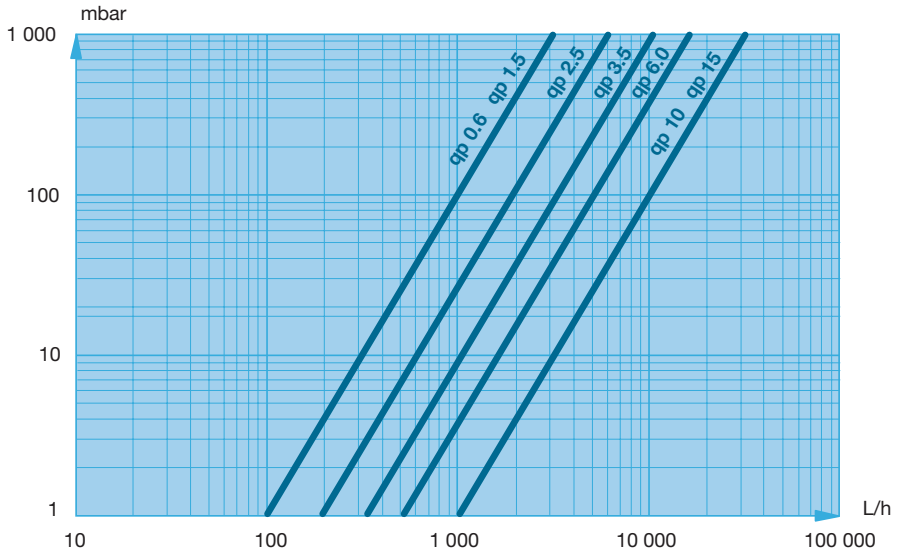
The multifunctional display facilitates easy reading, providing fast and clear access to the most important billing data. The display enables the diagnosis of failures alarms form a single glance.

The LCD has a long life time and through a push button you get easily access to each level of data.



1	Alarm Icon	6	Loop Indicator	11	Elapsed Time Indicator
2	Dirty Warning	7	Units	12	Thresholds
3	Temperatures	8	Decimal Indication	13	External Water Meters
4	Flow Indicator	9	Pulse Input Value	14	Main Digits
5	Date & Time Digits	10	Peaks		

HEAD LOSS

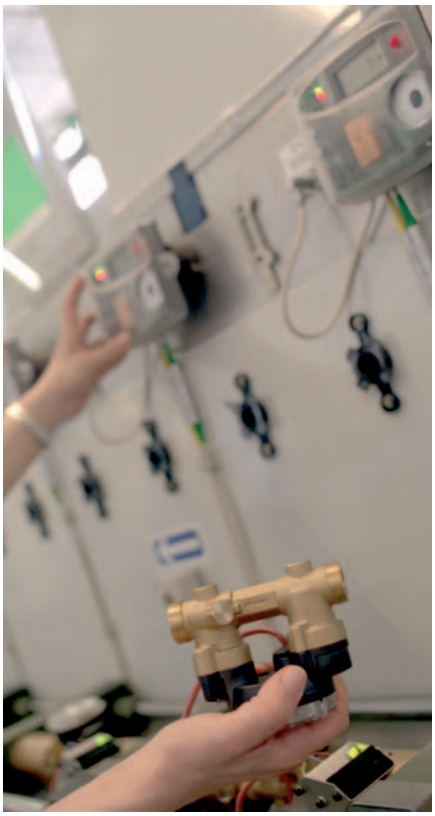


Technical Characteristics

Nominal Flow Qp m³/h	Diameter DN mm	Max flow Qs m³/h	Min flow Qi L/h	Start flow Qstart L/h	Body length mm	Pipe Connection	Nominal Pressure bar	Permanent max. temp. °C	Accidential max. temp. °C
0.6	15	1.2	6	1.2	110	G ¾ B	16/25	130	150
	20	1.2	6	1.2	130	G 1 B	16/25	130	150
	20	1.2	6	1.2	190	G 1 B/flanges	16/25	130	150
1.5	15	3	15	3	110	G ¾ B	16/25	130	150
	20	3	15	3	130	G 1 B	16/25	130	150
	20	3	15	3	190	G 1 B/flanges	16/25	130	150
2.5	20	5	25	5	130	G 1 B	16/25	130	150
	20	5	25	5	190	G 1 B/flanges	16/25	130	150
	25	5	25	5	260	G 1 ¼ B	16/25	130	150
3.5	25	7	35	7	150	G 1 ¼ B	16/25	130	150
	25	7	35	7	260	G 1 ¼ B/flanges	16/25	130	150
	40	7	35	7	300	Flanges	25	130	150
6	25	12	60	12	150	G 1 ¼ B	16/25	130	150
	25	12	60	12	260	G 1 ¼ B/flanges	16/25	130	150
	32	12	60	12	260	G 1 ½ B	16/25	130	150
	40	12	60	12	300	Flanges	25	130	150
	50	12	60	12	270	Flanges	25	130	150
10	40	20	100	20	200	G2 B	16/25	130	150
	40	20	100	20	250	Flanges	25	130	150
	40	20	100	20	300	G 2 B/flanges	16/25	130	150
	50	20	100	20	270	Flanges	25	130	150
15	50	30	150	30	250	Flanges	25	130	150
	50	30	150	30	270	Flanges	25	130	150

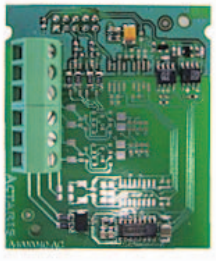
CF ECHO II Energy Calculator	
Temperature range	0 ... 180°C
Temperature difference	3 ... 160 K
Temperature sensor type	Pt100 or Pt500, 2 wires
Temperature sensor (Qp 0.6 to 2.5 m³/h)	Direct immersion or pocket type probes integrated in the flow meter body
Cable length to flow meter	From 0.4 to 10 m (Typical 1.5, 3 m)
Back-up memory	EEPROM
Display	LCD - 7 digits
Optical interface	EN 60870-5 / M-Bus protocol
Power supply (optional)	6 or 12 year Lithium battery, 230V main power supply or power supply by M-Bus

CF ECHO II Testing Pulse Value (Qp)	0.6	1.5	2.5	3.5	6	10	15
cm³/impuls	5	10	20	25	50	100	100



OPTION BOARDS

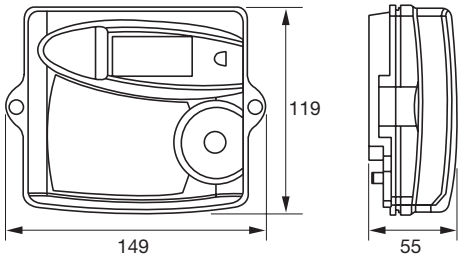
The CF ECHO II is pre-equipped for communication. Different option boards can be plugged simply to the meter and start working automatically.



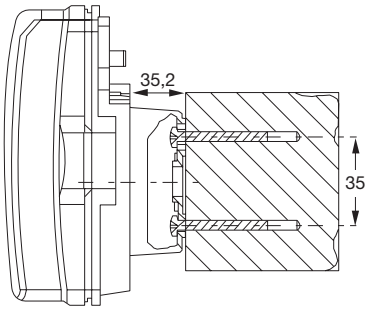
The following option boards are available:

- Board 1: **M-Bus + E/V Repetition**
- Board 2: **M-Bus + 2 Water Meters pulse input**
- Board 3: **GPRS Modem + E/V Repetition + M-Bus Master**
- Board 4: **LON + 2 Water Meters pulse input**
- Board 5: **Radio + 2 Water Meters pulse input**
- Board 6: **M-Bus + 2 Water Meters pulse input + power supply by M-Bus**
- Board 7: **RS232 + 2 Water Meters pulse input**

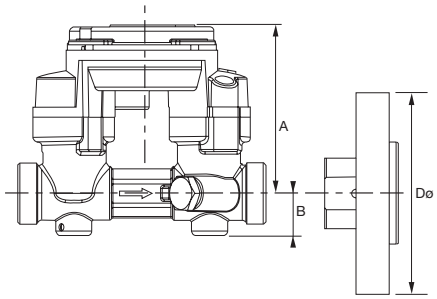
M-Bus	
Standard reference	EN 1434-3
Baud rate	300 to 2400 baud
Data in standard mode	Energy, Volume, Flow, Temperatures (supply, return, difference), Time in error, Operation time, Date and time, Volume of water meters 1&2, Firmware version
Pulse inputs for 2 water meters	
Pulse value (independent per input)	1 / 2.5 / 10 / 25 / 100 / 250 / 1000 L / imp
Pulse detection	Contact closed R ≤ 500 Ω Contact opened R ≤ 100 kΩ Maximum frequency: 10Hz
Energy and Volume Pulse output	
Pulse value	Repetition of display Energy from 1KWh to 1MWh Volume from 10 L to 1 m^3
LON Application	
Transceiver	TP / FT-10
Transmission speed	78 Kb/s
Radio Applications	
Compatibility	AnyQuest radio walk-by system EverBlu radio fixed network system
Frequency	433 Mhz
Protocol	Radian open protocol
GPRS Modem with integrated M-Bus-Master (option)	
GPRS specifications	Quad Band GSM 850/900/1800/1900MHz
GPRS datatransfer via	SMS, E-Mail, FTP client, http client
M-Bus Master (option)	EN 13757-2/-3, 300/2400 Baud, 8 unit loads
RS232	
Standard Reference	M-Bus protocol EN1434-3
Baudrate / Data	See M-Bus specifications
Power supply	4V-12V DC (DTR signal or external DC supply)
Power supply by M-Bus (Board 6)	
Current consumption	2 unit loads = 3mA (M-Bus master / pemanent load)



Integrator



Wall mounting



Flow meter

See Technical Characteristics table for available lenghts

DN	15	20	25	32	40	50
A	72	72	77	77	85	85
B	18	18	23	24	35	-
Dø (flanges)	-	100	110	-	140	160

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